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ABSTRACT

Needs assessment is an activity undertaken for planning purposes. It is important to define the limits of the study and design it on a scale appropriate to the entire planning process. This paper suggests that a needs assessment be structured into two phases. In the pre-assessment phase, a conceptual framework and well-defined exploratory activities delineate the focus and scope of the assessment. The second phase is the formal assessment, in which the data-gathering tasks are limited to areas of concern highlighted by the pre-assessment. The pre-assessment phase is typically conducted by the needs assessor and small numbers of key informants. The formal assessment phase extends to a sampling of the larger population of clients, namely service receivers, service providers, and stakeholders. Three strategies for dealing with problems of scope are described: identifying critical issues, defining limits through analyses of existing data, and conceptualizing the problem using a "matrix assessment." The strategies can be used separately or in combination. Examples from educational and other settings are used to show the application of the strategies in different content areas. (Author/JAZ)

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LIMITING THE SCOPE OF NEEDS ASSESSMENT STUDIES

or

(How We Learned to Set Limits -- And Feel No Guilt)

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of the
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Abstract

Failure to define the limits of a needs assessment can result in one of two major types of errors. Either the scope is too broad or too narrow. If too broad, the assessment may encounter problems of unwieldy data collection, over-expenditure of time and other resources, and difficulty in establishing priorities for action planning on the needs. If too narrow, the study may fail to uncover significant needs. The scope must provide a balance of breadth and depth of assessment.

We suggest that a needs assessment be structured into two phases. In the pre-assessment phase, a conceptual framework and well-defined exploratory activities delineate the focus and scope of the assessment. The second phase is the formal assessment, in which the data-gathering tasks are limited to areas of concern highlighted by the pre-assessment. The pre-assessment phase is typically conducted by the needs assessor and small numbers of key informants. The formal assessment phase extends to a sampling of the larger population of clients, namely service receivers, service providers, and stakeholders.

Three strategies for dealing with problems of scope are described: identifying critical issues, defining limits through analyses of existing data, and conceptualizing the problem using a "matrix assessment." The strategies can be used separately or in combination. For example, the matrix can be used to set the direction for the full needs assessment effort, since it permits an analysis along three dimensions: content, critical issues, and strategy of inquiry. At that point data from the "critical issues" approach can be entered into appropriate cells of the matrix.

The authors draw on extensive practical experience in conducting needs assessments in a variety of settings--education at all levels, cooperative extension services, human services agencies, and interagency planning, among others-- and use examples to show the application of the strategies in different content domains.

Introduction

> "This is the first problem that developers confront as they construct needs assessment instruments. How much do they restrict the universe of possible needs? In what order are sources consulted to participate in that process? Finally, who has the last word in selecting one need over another?" (Rossett, 1982, p. 28)

Needs assessment studies do not simply happen -- they are conceived, debated, modified, conducted, used, and archived; all by actors viewing programs within a political and institutional setting. In this process a crucial feature should be the setting of limits, drawing the boundaries for the study.

Rossett (1982) has argued that the problem of parameters is crucial for the needs assessment. Experienced practitioners including Eastmond, Sr. (1986) and Witkin (1984) have attested that a common pitfall for needs assessment is to attempt too much. If a needs assessment consumes excessive time, energy and money, other steps in the planning process will suffer. It is not uncommon to overextend with a massive needs assessment effort and then to be so exhausted that the subsequent planning process falters and dies as a result.

If the scope is too broad, the assessment may also attempt to deal with too many parameters in too superficial a manner, thus failing to analyze any area in sufficient depth to be meaningful. The data collection may become unwieldy, and, without a sufficiently powerful conceptual basis, the mass of data presents a problem in establishing priorities among needs and a focus for action planning.

On the other hand, if the scope is too narrow, the study may fail to uncover significant need areas. Experienced needs assessors have found that managers or decision makers who request the needs assessment often have preconceived ideas about the identity of critical need areas and the

magnitude of needs, based on inadequate or outmoded data. Limiting the scope to the most obvious areas of need can result in wasted effort and in failure to go beyond the conventional wisdom of what is already known or perceived to be true.

The thesis of this paper is that needs assessments can be designed on a scale appropriate to the entire planning process and that consistent action by the needs assessor will be required to adhere to strict limits. We examine (1) who will set the boundaries; (2) how will it be accomplished; and (3) what action can insure a clearly bounded needs assessment study.

Some basic assumptions should be stated. Needs are in part a function of environmental situations, the assessor's background, and his or her unique cognitive style. Needs assessment is viewed as an activity undertaken for planning purposes, namely as one essential step in a planning-implementation-evaluation process. While assessing needs entails providing information for decision makers and includes value considerations, needs assessment is to be distinguished from program evaluation. The intents and functions, while complementary, are different.

We use Witkin's (1984) definition of needs assessment as "any systematic procedure for setting priorities and making decisions about programs and allocation of resources."

We use the term "needs assessor" to refer to the person, working from within the organization or as an outside consultant, who carries prime responsibility for conducting the study. Others involved in some way with the process are service providers, service recipients, and stakeholders, i.e., all others with an interest in the study's results.

A concept to be kept in mind throughout the process-- and this is true for all the methods described here -- is the difference between primary and

secondary level needs, and the issues and data related to them. Primary needs are those of clients--those who receive services, such as students, customers, or agency clients. Secondary needs are those of the organization -- those who serve the clients, such as management, teachers, or people providing support services. Issues regarding primary needs should be dealt with first; secondary need issues will become apparent as the primary ones are defined.

Who Sets The Limits? The Interpersonal Dimension Of Needs Assesment

The setting of limits in a needs assessment is commonly negotiated between people: between a contractor and a client in setting up contractual obligation, between an interviewer and an interviewee in gathering data, between a needs assessor and an oversight committee in analyzing results. When one party feels that the other has not gone far enough, the concerned party re-negotiates a position until both can be satisfied. One of the reasons that limitation strategies are valuable to a needs assessor is the universal pressure to go to excesses: to gather more data than is needed, to analyze beyond the level of fruitful results, to maintain an all inclusive character to the study when sharply defined outcomes are far more useful. These limitation strategies are valuable precisely because they focus efforts, thus conserving resources.

Conceptual Clarity

A major step toward limiting a needs assessment study comes from clarity in the mind of the needs assessor about what the proposed study is and, equally important, what it is not. The purpose of the study is to make some type of decision for future action, with the results to be used by people at various levels in the organization or agency to alleviate or

eliminate the needs. In other words, needs assessment data are not used primarily for research or for descriptive purposes. Therefore, the scope of the assessment can be determined partly by specifying beforehand what decisions are to be made, by whom, on the basis of the data. This point should be kept in mind as the needs assessor selects a strategy for specifying the limits of the assessment.

The actual determination of needs and their magnitude is generally accomplished by identifying the gaps between what is desirable (in terms of outcomes, not programs or solutions), and what currently exists. This process involves the gathering of factual data and the summarizing of value positions from an appropriate mix of service providers, service recipients and other stakeholders. It is not an infinite study of all the factual information about a community or service, nor is it an infinite sampling of opinions held by all parties interested enough in expressing value positions. Needs assessment is a vital step in the "Planning-Implementation-Evaluation cycle, centering upon problem identification. We concur with the suggestion of Kaufman (1982) that a needs assessment should result in the arrangement of needs "in priority order, select(ing) the needs to be resolved. (p.75)."

An important part of the pre-needs assessment work is to develop a conceptual framework such that the body of data will lend itself to setting necessary priorities for action. This means, among other things, that the distinction must be kept in mind between needs assessment for organizational or program planning, and needs assessment in the context of evaluation. From the perspective of planning (the point of view of this paper), needs assessment looks forward to identify critical or unmet needs; while from the perspective of evaluation (summative), needs assessment generally establishes value claims with respect to program accomplishments,

and thus typically looks backward on programs completed (Witkin, 1984). Different types of decisions are made, and different actions are appropriate for the two perspectives. As Rothman (1980) notes, evaluation research is broad in scope and includes much besides needs assessment. A further consideration is that the needs assessment itself should not include the specification of means or solutions to meet the needs.

Contractual Limitations

While these distinctions may be clear to the needs assessor, in practice they are often incredibly difficult to keep clear in the thinking of contractors or oversight committees. The use of written contracts may alleviate such ambiguity to some extent. The intents, methods, and anticipated products ("deliverables") should be stated clearly in writing. What makes this process somewhat difficult is that in needs assessment, unlike experimental design research, the hypotheses are uncovered as the study proceeds. One strategy employed successfully is, first to detail the steps involved in the needs assessment; second, to specify the role of the researcher; third, to state evidence of successful completion, and fourth, to suggest alternative courses of action should any of the steps be blocked. (Eastmond, 1976, pp.136-143).

Unfortunately, as anyone experienced in contracts knows, it is virtually impossible to forsee all contingencies beforehandandto pre-specify contractual obligations to preclude any misunderstandings. Nevertheless, the occasion provided by contractual specification is a crucial one for limiting the needs assessment's scope limited.

Political Considerations

One of the most difficult limitations for a needs assessor is to deal

directly with political considerations. External needs assessment, to use Kaufman's terminology, clearly necessitates a democratic process: whose needs as identified by whom? Capoccia and Googins quoted in Witkin, (1984) have noted that needs assessment is:

> ...primarily a political process in which the feasible, the opportunities, and the threats within the environment are carefully weighed and measured in light of existing value structures.... Although many problems have an array of powerful indicators, they could remain in a position of low priority until recognition legitimizes them (p.16).

The search for an "objective," non-political approach to assessing needs appears doomed. By its nature, political factors are evident, either overt or covert. But by attending to how political factors are weighted, limitation can be made.

Needs assessment models typically deal with a variety of data inputs, sift and sort those data, and emerge with a priority order of determined needs. While specific strategies for balancing and reconciling political factors are suggested in this paper, such a process is best identified beforehand to maintain a controlled level of data input and political control from various interest groups.

By structuring the needs assessment into phases, the needs assessor can control the types and levels of data input in the second, formal assessment phase without being tied to an unworkable contract. The needs assessor can thereby request that certain tasks in the second phase be contingent upon the results of the pre-assessment inquiries. Since the scope of the assessment and even the methods to be used in the extended data gathering phase will be specified as the result of the pre-assessment, the contract can be written to provide for alternative data collection strategies based upon the contingencies of the first phase. Contract modifications for Phase 2 regarding time and other factors can be made as required.

To summarize, in the planning of the needs assessment, important limitations can be built in by the needs assessor. These can be done by means of conceptual clarity, contractual specifications and recognition of political boundaries. As specific strategies are suggested in the sections that follow, the importance of these general guidelines will be evident.

Identifying Critical Issues

This section describes two methods for identifying critical issues, from which data can be abstracted, if desired, for entry into an assessment matrix (discussed in the last section). The focus of the methods, which were developed and field-tested in various settings as elements of different system approaches to needs assessment, is on identifying already-available data and on strategies for setting priorities on issues to limit the scope of the assessment to manageable proportions. Both use small group processes prior to more formal data collection strategies.

Identifying Issues for a Management Information System (MIS)

The MIS approach is intended to identify issues that will form the basis for ongoing, cyclical needs assessments. The approach gives managers information for decision making regarding needs in existing programs or services, and spots trends indicating the need for changes or for new programs or services. The approach incorporates a type of qualitative evaluation as a preliminary to identifying major issues. The issues then become the framework for gathering data that will show the magnitude of the gaps between existing and desired states, and thus indicating the presence of unmet needs.

The approach can be initiated at the organizational level or at the departmental level. In large and highly departmentalized organizations, it is often preferable to begin at the departmental level. When the first stages of the inquiry have been completed, it is often possible to identify issues that are held in common by several departments. When departmental and common issues have been identified, the next stage provides for identification of organization wide issues that relate to the overall goals of the organization.

The process starts with brainstorming sessions with key informants -- department heads, supervisors, middle managers, and others -- who are acquainted with the organizational and departmental objectives as well as the ongoing work at the requisite levels. The output from the sessions is a list of success and failure indicators from the program or service levels under consideration. Key questions for a high school might be, "If you were an outsider observing your classes, how would you recognize a successful program? How would you recognize an unsuccessful program?" The indicators should be related to student outcomes as much as possible, and based on observable behaviors. In a human services agency, key questions would probe indicators of successful and unsuccessful services to clients.

Success and failure indicators can be organized into outcomes, processes, and inputs. In a foreign language department in a university or high school, for example, an outcome indicator for students might be the ability to use the language in travel; process indicators might be doing assigned homework and oral practice; and input indicators might be the ability of teachers to speak the language fluently as well as read and write it, and the quality of materials available for instruction. An indicator at the organizational level might be enrollment, in this case, an indicator of an unsuccessful program would be a decline in the percentage

of first-year students later enrolling in advanced level courses.

During the brainstorming sessions, notes are made of any concerns that surface regarding satisfaction or dissatisfaction with the programs or services. This information is synthesized with the success and failure indicators to formulate issues statements.

After the brainstorming sessions, the success and failure indicators are related to the goals and objectives of the organization and the department. It may be found that few or no indicators have been suggested for some of the objectives, and conversely, that some indicators apparently relate to concerns that go beyond stated objectives. If so, this finding should be discussed to see whether the indicators might point to issues that are of sufficient importance to review the adequacy of existing goals and objectives. Perhaps the work of the organization has changed over the years and it is time for a review of the relevance of the goals and objectives. Or perhaps a department has taken on responsibilities beyond its mandated scope, or has slighted necessary services, or has encountered factors related to client needs requiring organizational renewal.

Once the indicators have been organized in relation to the goals and objectives, the next step is to identify major areas of concern and to draft questions about the issues. It is preferable to formulate the issues as questions rather than statements -- e.g., for a physical education program, "Do students take responsibility for their own health and fitness?" Priorities can then be placed on the issues using judgements of the key informants as a basis for defining the limits of the needs assessment. The issue questions also guide to the types of data collected to delineate needs. For a more complete description of the issues approach in an MIS and how the data may be used in a discrepency analysis to set

priorities on needs, see Witkin (1984), pp. 55-62.

Defining Limits Through Analysis of Existing Data

A second method of narrowing the scope of a needs assessment is to use a focus group process together with interim fact-gathering activities. This process identifies what is already known or believed to be true about primary and secondary needs. Participants identify and examine existing data to discover gaps that should be filled by means of surveys or social indicators.

The basic method, which can be adapted to the setting and circumstances, uses three small group sessions and interim data gathering activities. The process is directed by a needs assessor who may work with a small steering committee. The focus group is composed of 12 to 20 key informants who are familiar with the objectives and work of the agency or organization. For a school district, these are typically representative teachers, administrators, parents, support staff, and students. A human rights agency could involve the director, department heads, and representatives of external stakeholders, such as employers, unions, and housing authorities.

In Session 1 there are four stages:

1. Examine the organizational goals. If there are more than six or eight, and if there is some overlapping or if they are stated very generally, identify the key idea of each goal, and cluster the goals into a smaller number of categories. These categories form the basis for later data gathering.

2. Generate concerns for each goal category. A nominal group process works well here. Each individual writes concerns on separate cards. For a typical group, from 60 to 75 concerns may be generated. Use a card sort to

organize and synthesize the concerns, and reduce the statements to five for each goal category. These are posted on wall charts and reviewed for group consensus on criticality of the concerns for the needs assessment.

3. Reach agreement on the major concerns. During an advocacy period, each person who wishes has 30 seconds to defend the criticality of a given concern or group of concerns. The group then sets priorities on which concerns should be pursued in the needs assessment, using the "rule of three": each member votes for the three most important and the three least important concerns. The votes are tallied, and the ten most important are selected for the next stage.

4. List what is known about each concern. The goal categories with their concerns are assigned to teams of two or three persons. During the session, they list all that they presently know of (a) facts and opinions currently available for the concern areas, and (b) types of facts and opinions that are not known, but that would have to be gathered in order to analyze the needs.

To illustrate: In a school district, a curriculum goal elicited concerns that declining enrollment was causing program cuts and that budget reductions were affecting programs and extracurricular activities. The team assigned to that goal had to decide what was actually known about enrollments and budget reductions, and what data would have to be gathered in order to clarify the concerns.

Each team then takes an assignment to gather specific information before the next session. This information should come from readily available sources within the agency or organization, such as case summaries, enrollment records, budget reports, or program evaluation reports. In the interim, the needs assessor organizes the outputs from Session 1 into separate charts, each containing a statement of a high-

priority concern for a specific goal, and lists items in four parallel columns: facts available, opinions available, facts to be gathered, and opinions to be gathered.

In Session 2, the teams review the charts and add items to the fact and opinion columns. Charts are annotated for additional information to be gathered, such as definitions, statistics, present efforts to meet a need through existing programs or services, results from previous evaluation activities, and reasons why the concerns have not yet been met. Each member or team takes an assignment to gather specific data from available sources. During this session there can also be a discussion of resources available and resources required to meet probable needs in specific areas of concern.

Before the third session, the needs assessor (perhaps with assistance from staff planners or evaluators) produces a draft design for a formal needs assessment, focused upon gathering information and opinions not presently available in each high-priority concern area. In other words, the formal needs assessment is limited to filling gaps in knowledge of selected priority areas of concern. The assessment might include one or more surveys of targeted groups, targeted interviews the gathering of additional data and social indicators, or interactive processes with key groups.

In Session 3, the needs assessor presents the draft design to the focus group, which then advises on the adequacy of the scope and boundaries of the needs assessment and the general design.

It has been found that the above process not only succeeds in setting the boundaries and in limiting the scope of the needs assessment to critical areas where insufficient data exist, but also that the focus of the assessment and the resulting critical needs often turn out to be quite

different from what management (or the needs assessor) formerly believed should be the focus.

The foregoing methods have several features in common. Elements of each could be combined to meet the requirements of a given context. Both the MIS and focus group approaches use small group sessions of key informants to delineate what is already known, what areas of concern or issues arise from the group knowledge, and what data are already available to elucidate the needs. A drawback of either approach may be that some important but not readily recognizable need might be overlooked. However, with a sufficient diversity of informants and a broad look at the present data base, the liklihood of overlooking an important need is reduced.

The Matrix Assessment Scheme

Once issues and content or subject matter have been identified, another step in the process of delimiting the scope of needs assessment can be taken. No additional data are needed and an assessor working with existing data can arrange his or her findings in a way that will provide additional direction to a study.

The existence of unmet needs and their criticality can presumably come to light through the discovery of facts. But a "fact" is an abstraction from realities in the environment, and the underlying data may appear to be in disarray. Relationships between facts are sometimes difficult to see and understand. One method for arraying these facts is an approach we term "Matrix Assessment." The dimensions of the matrix come from the environment and define two classes of facts - content and issues. Content facts are those arising from subject matter areas (for those comfortable with an academic approach) or from commodities (for those comfortable with a Cooperative Extension approach).

Content facts are usually readily determined by individuals working in the problem or commodity areas. Examples of content facts from an Extension situation might include livestock breeding, dairy production, or weed control. Content facts in an education situation might include faculty quality, class size, course evaluations, or subjects taught. Content facts in business and industry might include corporate organization, sales, productivity, or competition.

These content facts can be arrayed along one dimension of the matrix under construction. Issue facts are arrayed along the other dimension of the matrix and are essentially different from content facts in at least one way. These facts can affect and be affected by any number of content facts in any number of ways. Using the Cooperative Extension example for a moment, some issue facts that face farmers are water policy, marketing, financing and foreign relations (also known as wheat sales). As each cell is formed at the intersection of the issue and the content fact, natural boundaries can be defined and directions for needs analysis emerged. If, for example, the issue of water policy affects all of the content facts; then the assessment should be centered on water policy or the issue. If, on the other hand, the issue is determined to affect only one content fact, then the assessment may well remain content bound. Figure 1 provides an illustration of how issue facts and content fact help provide direction for needs assessment.

	MARKETING	WATER QUALITY	PRICE SUPPORTS	PRODUCTION COSTS
DAIRY PRODUCTION	*High Relevance*	*High Relevance*	*High Relevance*	*High Relevance*
LIVESTOCK BREEDING	*High Relevance*	*Low Relevance*	*High Relevance*	*High Relevance*
PARASITE CONTROL	*Medium Relevance*	*Low Relevance*	*Low Relevance*	*High Relevance*
BULL GRADING	*High Relevance*	*Low Relevance*	*Low Relevance*	*Low Relevance*

Figure 1. *Content facts/issue facts matrix table.*

A needs assessor may find that problems defined by the cells in the matrix adequately limit the scope of the assessment by defining the problem. The matrix also provides direction if the cells do not adequately cover the problem. For example, at the cell defined by water quality and dairy production, there may not be enough of an issue for a needs analysis activity. If the assessor can trace the water quality issue across additional cells, he or she may find closely related problems in other subject matter settings, thus, changing the focus of the needs assessment activity. Or, the assessor may notice other issues crossing a particular content and help him or her decide that the focus of study should center on dairy production generally rather than dairy production affected by water quality. Using a matrix framework to think about needs assessment will help assessors discover when problems are too narrow or too broad. Such a framework can also enable an assessor to change perspectives regarding the problem or set of facts.

A third dimension of our matrix framework is related to choice fo an inquiry strategy. Some assessors are adept at selected strategies which are properly used in assessing certain problems. The issues of qualitative or quantitative assessment methods can be more easily defined by using a matrix approach. If the matrix becomes three dimensional, then methods of assessment can be factored into the assessment approach. If, however, the assessor is neutral in his or her methodological bent, the two dimensions from the matrix can guide in choosing an approach. The content facts seem to lend themselves to quantitative tools, while the issues seem to lend themselves to qualitative tools. A rule of thumb might be to total rows and columns to decide which kind of emphasis the assessment is likely to have, choosing between the two kinds of approaches.

CONCLUSION

The importance of setting limitations in needs assessments -- on "who" will be involved, on "how" the work will be carried out and on "what" activities will be undertaken -- cannot be overstressed. The danger of overexpending resouces in carrying out a needs assessment study or of unduly narrowing the study's scope should be considered major pitfalls to avoid.

Clarity of intent can be prespecified. Strategies such as an MIS approach, a focus group technique, and codifying existing data have been suggested. In addition, a matrix planning model to specify political and conceptual boundaries has promise.

Just as a person interviewing for a new job has to balance the questions of benefits and contractual obligations with a commitment to do the work, a needs assessor must be committed to handling the work well but at the same time, must define limits precisely. Using these strategies, as well as ingenuity and finesse in working with clients, offers much in ensuring a successful needs assessment study.

References

J. N. Eastmond, Jr. (1976) The Implementation of a Model for Needs Assessment in Higher Education. Unpublished dissertation, University of Utah, Salt Lake City, Utah.

J. N. Eastmond, Jr. (1981) "Assessing Instructional Needs at the Departmental Level: Why and How" International Journal of Instructional Media, 8:4, 317-327.

J. N. Eastmond, Sr. (1986) Audio Teleconference on Needs Assessment, recording in author's possession.

R. Kaufman, (1982) Identifying and Solving Problems: A System Approach. (3rd Ed.) San Diego, California: University Associates.

A. Rossett. (1982) "A Typology for Generating Needs Assessments," Journal of Instructional Development, 6:1, 28-33.

Rothman, J. (1980) Using Research in Organizations: A guide to Successful Application. Beverly Hills, Calif.: Sage.

Witkin, B. R. (1984) Assessing Needs in Educational and Social Programas: Using Information to Make Decisions, Set Priorities, and Allocate Resources. San Francisco: Jossey Bass.